REMARKS/ARGUMENTS

The Office Action mailed September 29, 2003, has been reviewed and the comments therein were carefully considered. Claims 1-9, 11, and 13-19, 21-25, and 27-30 remain pending. Claims 1, 13, 19, and 21-24 have been amended, and claims 10, 12, 20, 26, and 31-33 have been canceled.

Rejections under 35 USC § 102

Claim 13 was rejected under 35 U.S.C. 102(e) as being anticipated by Gulick (U.S. 6,421,702).

Claim 13 is directed to: a method of scheduling resources on at least one microprocessor that includes a CPU and a device, the method comprising the steps of: using the device to determine, in response to a first non-maskable interrupt, when to allocate the resources in real-time; causing the device to issue a second non-maskable interrupt to the CPU when it is time to allocate the resources; and causing the CPU to allocate the resources in response to the second non-maskable interrupt.

In contrast to what is claimed, Gulick discloses real-time interrupts that cause an operating system to provide execution time slices for pending isochronous (i.e., time-dependent) tasks. Each application informs the operating system of an execution rate and a maximum duration of its isochronous tasks. The operating system includes a non-maskable interrupt to terminate isochronous tasks. Termination is necessary when an isochronous task fails to finish executing within its specified maximum duration. (Abstract).

Gulick discloses use of non-maskable interrupts only for terminating isochronous tasks that fail to finish executing within their specified maximum duration. (Col. 11, lines 3-23). Gulick does not teach or suggest determining, in response to a first non-maskable interrupt, when to allocate the resources in real-time, as recited in claim 13. Nor does Gulick teach or suggest issuing a second non-maskable interrupt to the CPU when it is time to allocate the resources, and causing the CPU to allocate the resources in response to the second non-maskable interrupt, as recited in claim 13.

For at least the reasons discussed above, Gulick does not anticipate claim 13. Therefore, Applicant respectfully submits that claim 13 is in condition for allowance. Claims 14 and 15 depend from claim 13 and are allowable for at least the same reasons as claim 13.

Rejections under 35 USC § 103

Claims 1-7, 9, 11, 14-21, and 23-33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Reiffin (US 6,330,583) in view of Gulick. Claims 8 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Reiffin in view of Gulick in view of Patterson et al. (U.S 6,320,882).

Claim 1 is directed to a method of scheduling CPU resources comprising the steps of: using a counter to determine when to allocate the CPU resources; instructing an interrupt controller, via non-maskable interrupts from the counter, to allocate the CPU resources; and instructing the CPU to allocate resources in real-time by the interrupt controller issuing non-maskable interrupts to the CPU.

Reiffin and Gulick, either alone or in combination, do not establish prima facie obviousness of claim 1 because they do not disclose use of non-maskable interrupts as recited in claim 1. As discussed in the Amendment filed July 17, 2003, Reiffin discloses a local area network that uses parallel processing. As indicated on page 4 of the Action, Reiffin does not teach using non-maskable interrupts. Col. 11, lines 3-23, of Gulick are cited in support of the assertion in the Action that Gulick discloses "instructing the CPU to allocate resource in real-time ... by the interrupt controller issuing non-maskable interrupts to the CPU."

As discussed above, though, in connection with claim 13, the cited portion of Gulick, is directed to terminating isochronous tasks that try to continue executing beyond their specified maximum execution duration. Such termination of isochronous tasks is different than preemption of tasks by higher priority tasks. (See Gulick, col. 10, lines 39-46, "It is noted that termination is distinct from preemption. Preemption is the normal suspending of a task so that another task may begin executing. For example, in FIG. 4, Task A is preempted to allow Task B to execute. Termination is the stoppage of a task due to an unexpected condition. For example, a task may continue execution beyond the duration specified for the task.")

Accordingly, Reiffin and Gulick, either alone or in combination, do not teach or suggest use of non-maskable interrupts as recited in claim 1, namely, instructing an interrupt controller, via non-maskable interrupts from a counter, to allocate CPU resources, and instructing the CPU to allocate resources in real-time by the interrupt controller issuing non-maskable interrupts to the CPU.

For at least these reasons, the Applicant respectfully submits that claim 1 is in condition for allowance. Claims 2-9, and 11 ultimately depend from claim 1 and are allowable for at least the same reasons as claim 1.

Independent claims 16 and 19 now contain limitations directed to the use of non-maskable interrupts that are similar to the limitations discussed above in connection with claims 1 and 13. Accordingly, applicant respectfully submits that claims 16 and 19 contain patentable subject matter and are in condition for allowance for at least reasons similar to those discussed above in connection with claims 1 and 13. Claims 17-18, 21-25, and 27-30, properly depend upon claims 16 and 19 and are, therefore, also in condition for allowance.

Conclusion

In view of the above discussion, Applicant respectfully submits that the pending claims are in condition for allowance. Reconsideration and allowance of the pending claims is respectfully requested. Should the Examiner believe that a conversation with the Applicant's representative would be useful in the prosecution of this case, the Examiner is invited and encouraged to call the Applicant's representative.

Respectfully submitted,

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